c. These differences of rainfall runoff characteristics are caused by bedrock condition. Bedrock of G-catchment has thicker regolith layer and more jointed than that of N-catchment. Therefore rainfall infiltrated deeply into bedrock in G-catchment, consequently base flow does not occur on normal times.

d. Channel floor conditions are quite different between two catchments. Fine grain size of sediments and the bedrock channel floor mean that the sediment yield is little in N-catchment. And little sediment yield is also confirmed by result of earth runoff observation. But the channel floor covered by coarse sediment shows that much sediment yield occur only associating with very much runoff in G-catchment. This characteristic is also observed in the other catchment around G-catchment, and this characteristic caused earth disaster that concentrated at drainages located in right of midstream of Kyungan River.

e. To prevent flood or earth disaster in midstream drainages of Kyungan River for the future, the more efforts should be paid out for the condition of more long-term rainfall runoff characteristics in small mountainous catchments and need microclimatological approaches.

Key words: *Kyungan River Basin, rainfall runoff characteristics, gneiss catchment, flood, earth disaster*

19. The sediment budget approach: from development to potentials and limitations

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The fundamental concept of sediment budgets -to locate sediment production and storage sites, to identify transport processes and linkages amongst them, as well as to estimate storage volumes and transport rates - is as old as geomorphology. The first definition of the term 'sediment budget' was published in 1978 as "a quantitative statement of the rates of production, transport, and sediment discharge of detritus" on catchments scale. The sediment budget approach has been developed in and for mountain catchments in temperate/semi-arid climate regions. Recent sediment budget studies have also been conducted in other climate zones such as tropical or arctic regions. Most budget studies have been carried out to estimate and evaluate anthropogenic effects on sediment delivery. Other studies focus on typical landform systems, or on dynamic or transient landscape systems.

The major challenge is to estimate sediment storage volumes and residence times. Difficulties occur, when processes, not constrained to watersheds such as transport by wind or littoral processes, play a major role. Sediment budgets, a quantitative process representation, may reflect only a part of geomorphic research, as landforms are not necessarily considered. Further, if modern process data are inferred to pale-processes, the particular configuration of both geomorphic systems must be considered at appropriate time and space scales. Despite of these difficulties, it is a flexible concept to describe complex systems in a simple schema. Especially human impact and sediment disasters have been evaluated using the sediment budget approach.

Key words: *sediment budgets, theoretical geomorphology*